



## TCADA Research Brief

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# METHADONE IN TEXAS: ANALYSIS OF TREATMENT, ARREST, AND OVERDOSE DATA

April 1996

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# METHADONE IN TEXAS: ANALYSIS OF TREATMENT, ARREST, AND OVERDOSE DATA

## I. Introduction

This paper is an update of one published in November 1994,<sup>1</sup> which summarized data reported in surveys of methadone programs, including one completed in 1988. This paper provides information on the characteristics of clients entering publicly and privately funded methadone programs in Texas, the relationship between arrestees testing positive for opiates and methadone for 1991 through 1995, and methadone overdose deaths for 1991 through 1994.

Patterns of illicit drug use in Texas have changed over time. Prior to the introduction of crack cocaine in about 1986, heroin use was far more common than was cocaine use. In 1975, 61 percent of all treatment admissions (excluding alcohol) were for opiates and 0.4 percent were for cocaine. By 1987, 22 percent of the non-alcohol admissions were for cocaine, and in 1995, 57 percent of the non-alcohol admissions were for cocaine and 18 percent were for opiates.

As crack cocaine emerged, there were shifts in drug use based on socio-demographic characteris-

tics. Heroin has continued to be more prevalent among Hispanics, while crack is more prevalent among African-Americans. Because most indicator data systems, such as admissions to publicly funded programs and criminal justice statistics, reflect drug use among lower income minority populations, the extent of heroin and crack use among the White population is more difficult to assess.

In Texas, the predominant types of heroin are Mexican brown and black tar. In the fourth quarter of 1995, Mexican heroin was selling for \$180 to \$300 per gram for heroin that was 12 to 55 percent pure; \$2,300-\$6,000 per ounce for 35 to 70 percent pure heroin; and \$80,000 to \$175,000 per kilogram for 35 to 70 percent pure. Texas has not yet experienced the white heroin epidemic which is being reported by the cities on the East Coast.<sup>2</sup> White heroin is available, but it is not common and its use is reportedly by Yuppies. In Texas, Southeast Asian heroin ranges from \$3,000 to \$5,500 per ounce and \$150,000 to \$175,000 per kilogram; Southwest Asian sells for \$85,000 per kilogram. Colombian

heroin reportedly costs \$5,500 to \$6,000 per ounce at 40 to 80 percent pure and \$80,000 to \$100,000 per kilogram at 35 to 70 percent pure.

## II. Characteristics of Heroin Addicts Entering TCADA-Funded Programs

Since 1973, the State has funded methadone detoxification and maintenance programs. These programs were initially funded by the Texas Department of Community Affairs, Drug Abuse Prevention Division, and then by the Texas Commission on Alcohol and Drug Abuse (TCADA). These programs were initially funded as a result of a major federal initiative to provide services for heroin addicts, and these addicts had priority in admission to any drug treatment program.

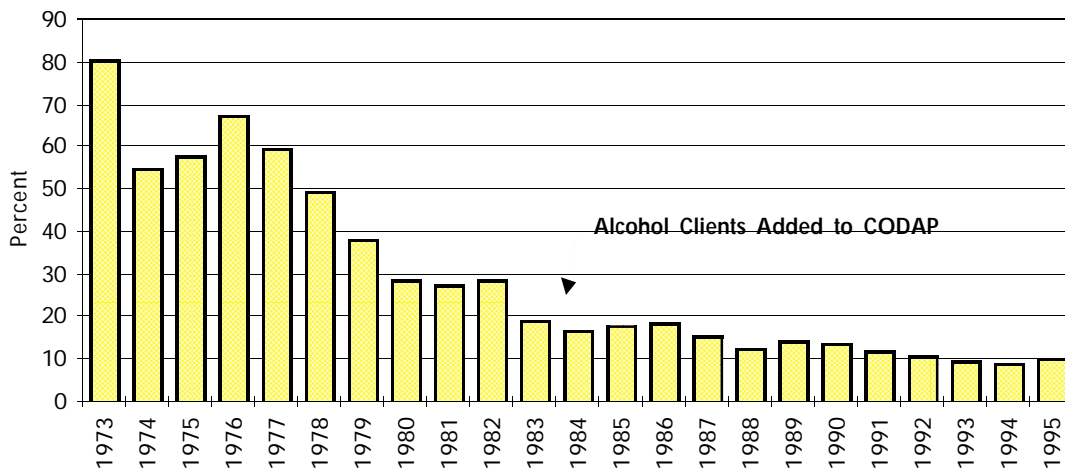
Exhibit 1 shows the percentage of heroin admissions to treatment from 1973 as reported on CODAP, the Client-Oriented Data Acquisition Process. By 1980, the federal emphasis on heroin users as a priority population had decreased, and in the mid-

1980s, when alcohol clients were added to CODAP, the proportion of heroin admissions decreased even further. By 1995, 10 percent of all admissions, including alcohol, were for a primary problem of heroin. The number of heroin admissions has ranged between 4,800 to 5,600 since 1990.<sup>3</sup> Of the heroin addicts entering treatment in 1995, 1,186 were admitted to methadone treatment programs (MTP),<sup>4</sup> as Table 1 shows. The other heroin addicts entered different treatment modalities.

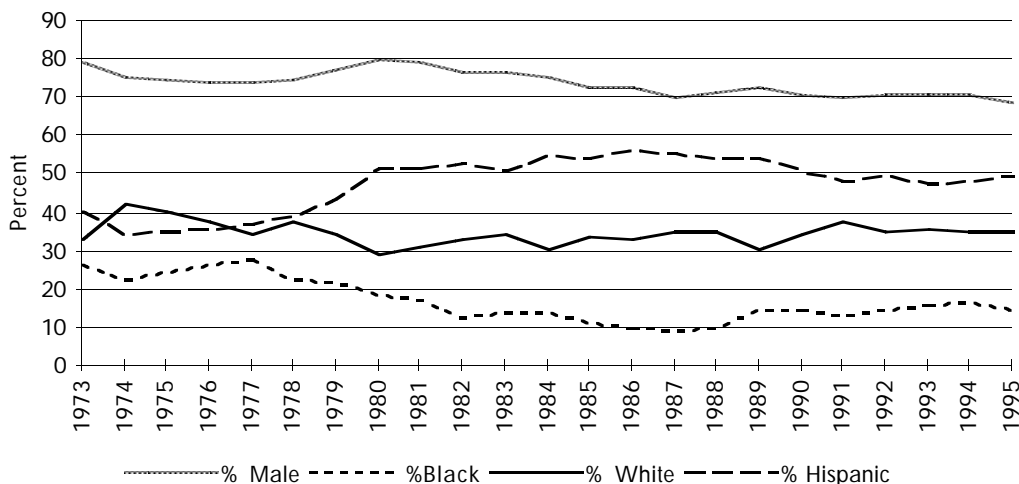
The percent of women entering any TCADA program who are heroin addicts has continued to increase (Exhibit 2), and women are more likely to enter MTPs than other programs. The racial/ethnic distribution of heroin addicts has remained fairly stable over the last few years, and there is no difference in the racial/ethnic characteristics of all heroin addicts admitted to treatment and those entering MTPs.

In addition, the age of heroin addicts at admission has continued to increase, as has the lag between

**Exhibit 1 — Heroin Addicts as a Percent of All Admissions to TCADA-Funded Programs**



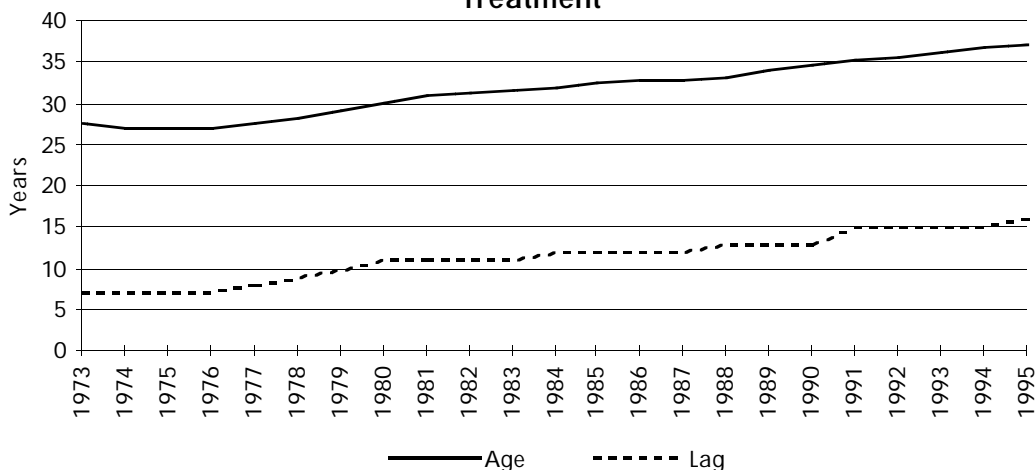
**Exhibit 2 — Characteristics of Heroin Addicts at Admission to Any TCADA-Funded Program**



first heavy use and entrance to treatment (Exhibit 3). As Table 1 shows, the heroin addict is older than any other drug client at admission, and the heroin addict entering a MTP is even older. Comparing first admissions with readmissions to treatment shows that the average age of a first admission to an MTP is 36 years with a 14-year lag; for MTP clients who

have been in any previous treatment, the average age is 39 years, with a lag of 18 years. This means that addicts entering treatment in 1995 first began heavy use of heroin in the period between 1977 and 1981. Any more recent heroin epidemics have not yet resulted in a surge of admissions to publicly funded treatment.

**Exhibit 3 — Average Age of Heroin Addicts at Admission and Average Lag Between Year of First Use and Admission to Treatment**



**Table 1 — Characteristics of Clients Entering TCADA Programs, 1995**

	<b>n</b>	<b>Average Age</b>	<b>% Male</b>	<b>% Black</b>	<b>% White</b>	<b>% Hispanic</b>	<b>% Employed</b>
<b>All Clients</b>	48,136	33.31	71%	33%	43%	23%	29%
<b>Heroin Clients</b>	4,809	37.11	69%	14%	35%	49%	19%
<b>MTP Clients</b>	1,186	38.88	66%	14%	35%	50%	26%

	<b>% CJ Referred</b>	<b>% Married</b>	<b>% Live with Family</b>	<b>% Homeless</b>	<b>% Physical Problems</b>	<b>% Social Problems</b>	<b>Annual Income</b>
<b>All Clients</b>	53%	23%	57%	8%	46%	46%	\$5,339
<b>Heroin Clients</b>	41%	29%	59%	7%	56%	53%	\$3,303
<b>MTP Clients</b>	3%	36%	80%	3%	61%	50%	\$3,858

Some 45 percent of all methadone clients reported no other problem drug, but 33 percent reported cocaine, 10 percent reported alcohol, and 5 percent reported marijuana as additional drugs of abuse.

Heroin addicts entering methadone programs are the most impaired of all substance abusers as evident in Table 1. CODAP collects information on the number and frequency of physical and social problems reported by clients (Exhibit 4). The physical problems include memory lapse or blackout after a period of intoxication; shakes or tremors or other withdrawal symptoms; alcohol or other drug use before noon; and sickness or health problems related to alcohol or drugs. Social problems include missing a meal or other planned activity due to use of alcohol or other drugs; being intoxicated while at work or at school; and fighting or quarreling due to alcohol or other drugs.

The income and employment status of all substance abuse clients has dropped over time (Exhibit 5). Heroin addicts are much less likely to be employed than other substance abusers, and their income is much lower. However, clients entering methadone programs are more likely to be employed

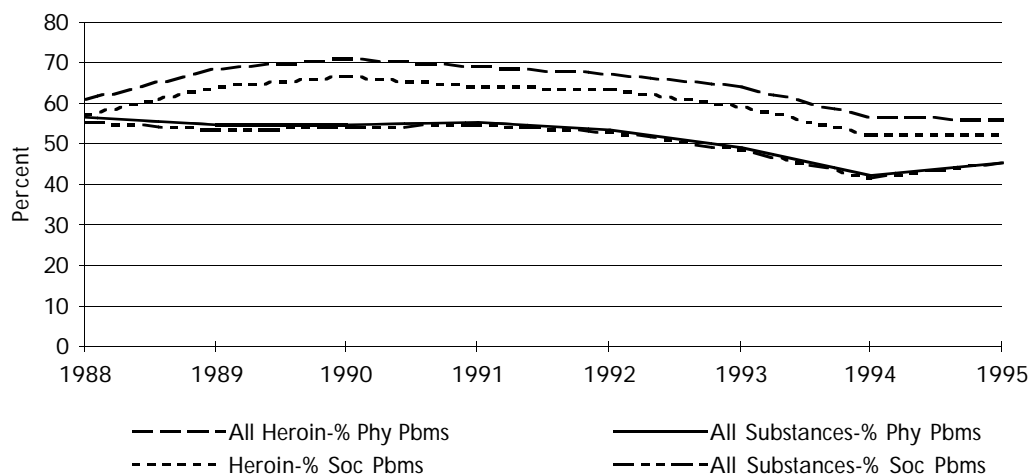
than those heroin addicts who enter other treatment modalities.

Heroin addicts entering methadone programs have an important social support network in terms of being married and living with their families, and their rate of homelessness is lower than for other substance abusers.

The source of referral into treatment appears contradictory. For all clients entering TCADA-funded treatment, the percent referred by the criminal justice system has increased dramatically since 1991, but will drop significantly since the majority of the criminal justice treatment programs quit reporting on this data system at the end of August 1995. Some 41 percent of heroin addicts were referred to treatment by the criminal justice system, but generally these addicts are not referred by the criminal justice system to methadone programs. Only 3 percent of methadone clients were referred by the criminal justice system. This low rate of referral is primarily due to the negative relationship between methadone programs and criminal justice personnel, as described in the 1994 paper.<sup>5</sup> Over 53 percent of the referrals into methadone programs are self-referrals,



**Exhibit 4 — Percent of Clients Reporting Physical and Social Problems at Admission to TCADA-Funded Programs**



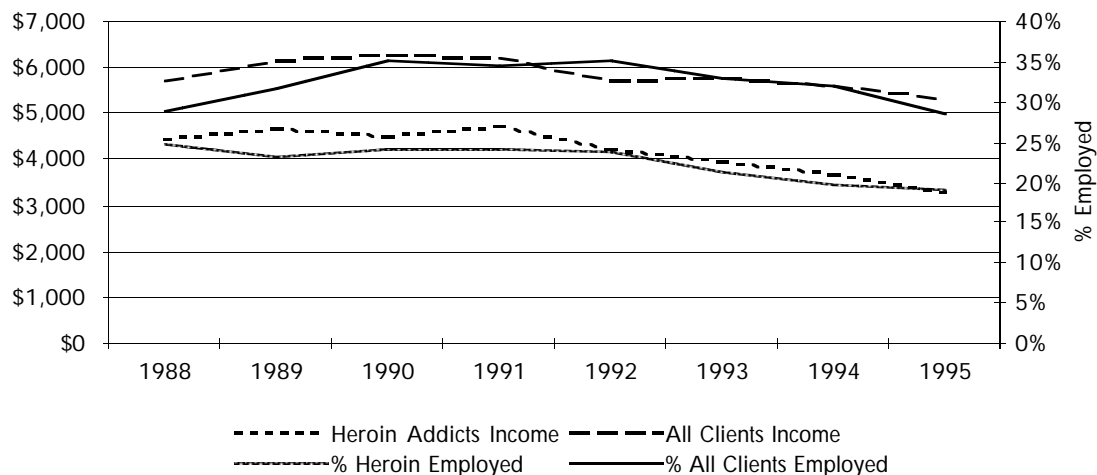
with 9 percent by family or friends.

Clients entering methadone programs in 1995 reported heroin as their first drug of abuse (97.5 percent), followed by Other Opiates (2.2 percent). Needles as the route of administration for these primary drugs have gradually decreased: now 91 percent use needles, 5 percent inhale, and 3 percent

report “oral”<sup>6</sup> as the route. However, needle use is more common among those addicts who have previously been in treatment, with 95 percent reporting needle use, as compared to 86 percent of those addicts entering treatment for the first time.

Because patterns of heroin use are changing nationally,<sup>7</sup> the characteristics of first-time admissions

**Exhibit 5 — Average Annual Income and Employment at Admission to All TCADA-Funded Programs**



**Table 2 — First Admissions to TCADA-Funded Methadone Treatment, by Route of Administration, 1995**

	n	% Black	% White	% Hispanic	% Asian
Needle	213	14%	36%	50%	0%
Inhale	26	42%	19%	27%	12%
Oral	4	0%	25%	75%	0%
	% Male	Average Age	% Physical Problems	% Social Problems	Annual Income
Needle	64%	36.4	75%	61%	\$4,467
Inhale	77%	33.7	77%	77%	\$8,462
Oral	0%	34.5	100%	100%	\$7,250

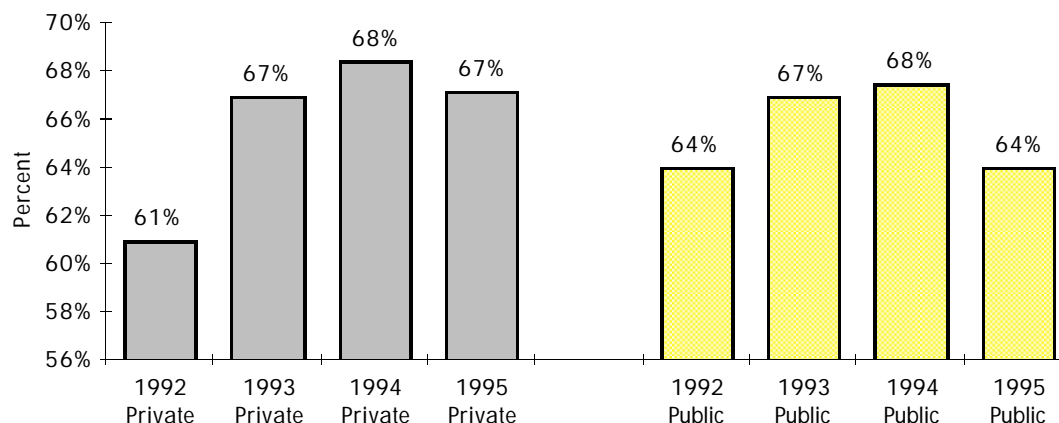
were analyzed for route of administration in Table 2. Needle users are less likely to be male as compared to heroin inhalers but they are more likely to be older than inhalers, and most significantly, they are more likely to be Hispanic and far less likely to be African American. In addition to the overrepresentation of African Americans among inhalers, 12 percent of the inhalers were Asian. Needle users are also more likely to be impoverished as shown by average annual income. One treatment program has

reported that the inhalers are not only “afraid” of needles because of the threat of HIV/AIDS, but they are holding down jobs and do not want the track marks to identify them as addicts.

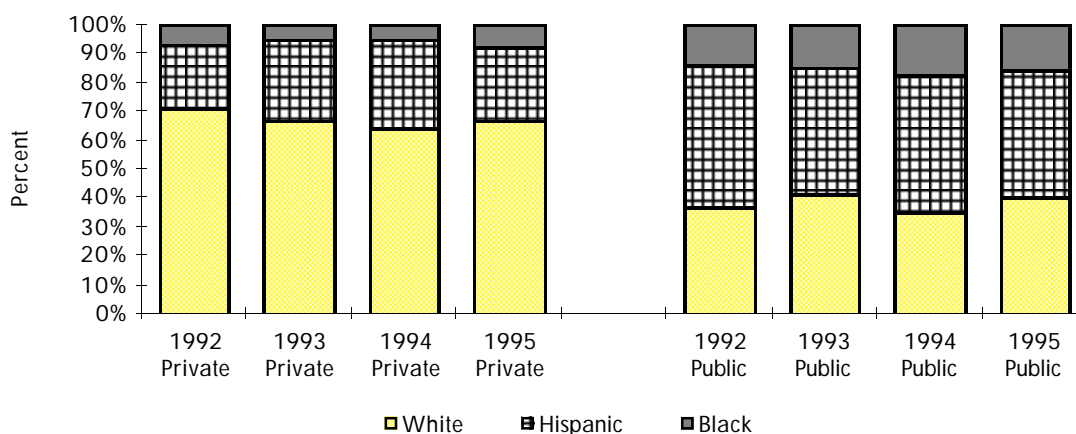
In comparison, only 2 percent (four clients) of the first admissions used heroin orally, but significantly, all were female, 75 percent were Hispanic and 25

percent were White. These oral users were the most likely to report physical or social problems than were needle users or inhalers. Oral users in Texas can be opium eaters or addicts who dissolve Black Tar heroin in water and then administer it like nose drops.

**Exhibit 6 — Percentage of Male Clients in Private and Public Methadone Programs, 1992-1995**



**Exhibit 7 — Racial/Ethnic Characteristics of Methadone Clients  
in Private and Public Methadone Programs, 1992-1995**



### III. Comparison of Clients in TCADA-Funded Methadone Programs with Clients in Private Methadone Programs

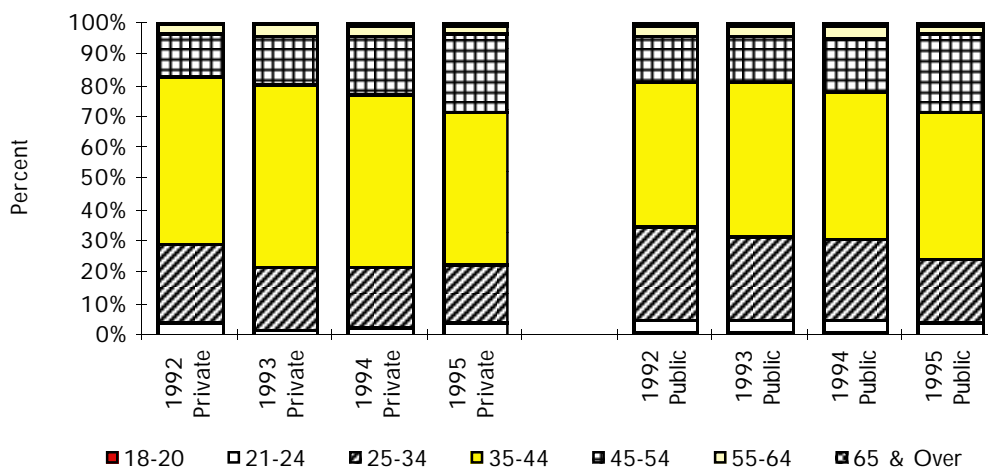
In 1988 and 1994, TCADA conducted a special survey of the methadone programs in the state. In 1995, all treatment programs in Texas are asked to participate in an annual survey, the Uniform Facility Data Set Survey. This survey asks the programs to provide summary information about client characteristics. In 1995, 20 private methadone programs and seven TCADA-funded programs had responded by the time this paper was written. The survey format collected aggregated client data, so CODAP data reported on individual clients were used to profile TCADA clients in 1995, since it is a richer dataset. Because of the problems of aggregating client data, the information on the private programs should be viewed with caution.

Exhibit 6 shows that about two-thirds of the clients in public and private programs are male. As

Exhibit 7 indicates, the private programs are more likely to serve White clients, whereas the public programs are more likely to serve minority populations. Over the four-year period, the proportion of Whites in the private methadone programs has averaged 66 percent as compared to 38 percent in the public programs. Hispanics comprised 26 percent of the admissions in private programs and 46 percent in public programs, whereas African Americans comprised 6 percent of private admissions and 16 percent of public admissions.

As discussed earlier, methadone clients are aging. Exhibit 8 shows the age categories for private and public programs. The largest group of clients in both types of programs are in the 35-44 age group (about 48 percent of clients in both types of programs in 1995). The proportion of clients in the 45-54 age group has increased from about 14 percent in 1992 to 25 percent in 1995, which is additional evidence of the aging of heroin addicts who entered

**Exhibit 8 — Age Distribution of Methadone Clients in Private and Public Methadone Programs, 1992-1995**



treatment. From these data and from conversations with treatment providers, it appears that the white heroin epidemic that is seen on the East Coast has not yet hit Texas and young users of this heroin are not yet entering treatment.

The 1994 survey queried the programs on the employment status of clients, and there were substantial differences. Whereas only 19 percent of clients in public programs were employed full-time, the average for private programs was 56 percent. Two private programs reported that 89 percent of their clients were employed full time. Some 29 percent of the clients in one private program were reported to have college degrees.

The 1988, 1994, and 1995 surveys collected information on services provided by the programs (Table 3). While TCADA-funded programs have always been required to provide counseling, this was not originally a requirement for private programs, since they did not have to meet TCADA licensure standards until 1989. Over time, however, the pro-

portion of private programs providing such services has continued to increase. In 1988, 58 percent of the private programs provided individual counseling and 42 percent provided group counseling; in 1995, 90 percent provided individual counseling and 55 percent provided group counseling.

In terms of testing, the private programs are more likely to provide testing for sexually transmitted diseases and hepatitis, while the TCADA-funded programs are more likely to provide testing for HIV. In terms of health care and transitional services, the programs look fairly similar. The biggest differences are in continuing care, and since TCADA requires that its programs contact clients 60 days after discharge, the post-discharge followup for these programs was much higher. In addition, the TCADA programs provided more services in the “other” category in terms of case management, HIV/AIDS counseling, parenting, self-help, and transportation. However, the private programs were much more likely to provide detoxification services.

**Table 3 — Services Offered by Private and TCADA-Funded Methadone Programs**

	Private n=20	Public n=7		Private n=20	Public n=7
<b>Therapy</b>			<b>Transitional</b>		
Family	50%	71%	Discharge planning	70%	100%
Group	55%	100%	Employment counseling	40%	43%
Individual	90%	100%	Housing	25%	29%
Pharmacotherapies	90%	100%	Referral to other	95%	86%
Relapse prevention	45%	57%			
<b>Testing</b>			<b>Continuing Care</b>		
Blood alcohol	15%		Aftercare	25%	43%
Urine	95%	100%	Alumna groups	10%	43%
Hair	5%		Discharge followup	15%	86%
Hepatitis	20%				
HIV	45%	71%	<b>Other</b>		
STD	80%	29%	Acupuncture	5%	14%
TB	100%	100%	Case management	5%	57%
<b>Health Care Referral</b>			Detox	75%	29%
Family Planning	10%	14%	Health education	60%	57%
Medical	20%	29%	HIV/AIDS counseling	70%	100%
Prenatal	20%	14%	Home therapy		14%
TB treatment	25%	29%	Outreach		29%
			Parenting	10%	43%
			Self-help	10%	57%
			Social-Recreational	5%	
			Smoking	5%	
			Transportation		43%

The programs were queried as to staffing patterns, and overall, the staffing patterns are similar. All had licensed chemical dependency counselors. The TCADA programs were more likely to have social workers who hold master's degrees and to have physicians who are psychiatrists, which is due to the fact that some TCADA-funded programs are community mental health centers where psychiatrists are already on staff.

#### IV. Relationship of Arrests for Heroin and Methadone

To test the theory that illicit methadone use in-

creases when heroin is not plentiful, Drug Use Forecasting System (DUF) data for 20 quarterly reporting periods from 1991 through 1995 were examined to test the relationship between the percentage of arrestees testing positive for heroin and the percentage testing positive for methadone in Dallas, Houston, and San Antonio. DUF obtains urinalyses for a sample of arrestees in these cities every quarter.

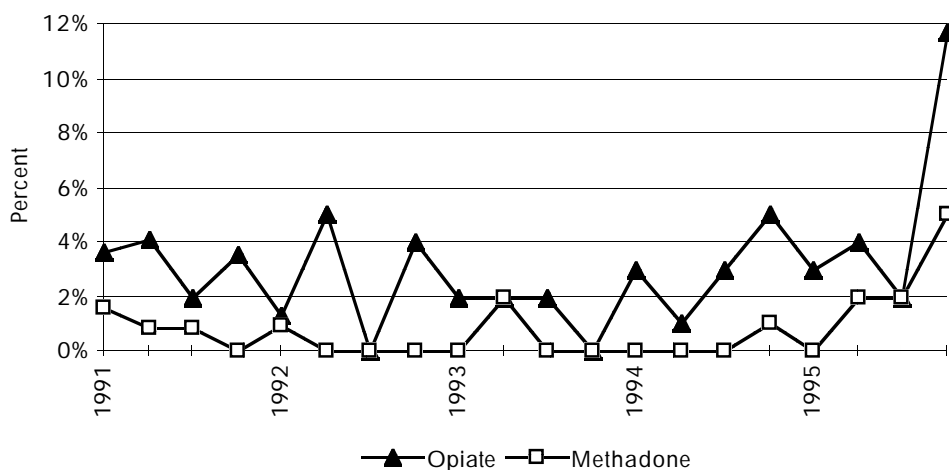
As Table 4 shows, DUF reports on the use of opiates, methadone, and cocaine vary by city. Use of opiates and methadone is highest in San Antonio, whereas cocaine use is higher in Dallas and

**Table 4 — Percent of Arrestees Testing Positive for Various Drugs (DUF)**

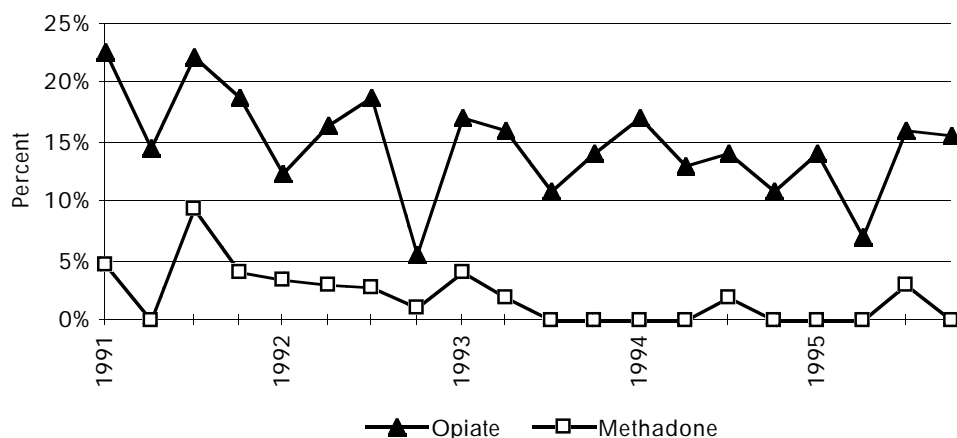
	Average per Calendar Year				
	1991	1992	1993	1994	1995
<b>Opiates</b>					
Dallas Males	4%	4%	5%	3%	5%
Houston Males	3%	3%	2%	3%	5%
San Antonio Males	15%	14%	14%	13%	10%
Dallas Females	9%	9%	11%	8%	5%
Houston Females	4%	4%	5%	6%	3%
San Antonio Females	20%	13%	15%	14%	13%
<b>Methadone</b>					
Dallas Males	0%	0%	0%	0%	0%
Houston Males	1%	0%	1%	0%	2%
San Antonio Males	2%	2%	1%	1%	1%
Dallas Females	1%	1%	0%	0%	0%
Houston Females	2%	0%	1%	1%	0%
San Antonio Females	5%	3%	2%	0%	1%
<b>Cocaine</b>					
Dallas Males	43%	41%	45%	35%	31%
Houston Males	56%	41%	41%	28%	40%
San Antonio Males	29%	31%	31%	31%	24%
Dallas Females	46%	48%	43%	46%	44%
Houston Females	51%	44%	43%	36%	32%
San Antonio Females	24%	25%	24%	23%	23%

Houston. The rate of DUF positives seems to be inversely related to the number of methadone programs in each community. There are five methadone programs sites in San Antonio, six in Dallas, and 18 in Houston, yet Houston has the lowest rate of DUF positives for opiates and methadone, while San Antonio has the highest rate. While the DUF rate is partially due to the fact that San Antonio is still primarily a “heroin” town, this inverse relationship raises the question of the need for

**Exhibit 9 — Percent of Houston Male DUF Arrestees Testing Positive for Opiates or Methadone, 1991-1995 (p=.699)**



**Exhibit 10 — Percent of San Antonio Female DUF Arrestees  
Testing Positive for Opiates or Methadone, 1991-1995**  
( $p=.664$ )



additional methadone treatment services in that town to handle the high rate of heroin use.

Exhibits 9 and 10 show that the illicit use of methadone varies among cities and by sex: very few positives were found over the years among Dallas males and females, and the rate of positives among Houston females was also very low, while the rates for San Antonio males and females and Houston males are higher. Correlations were run to test the relationship between heroin and methadone.

The correlation coefficient ( $p$ ) is a number that ranges from -1 to +1. A positive correlation means that as the values of one variable (heroin) increase, values of the other variable (methadone) also tend to increase. A small or zero correlation would mean the variables are not related, and a negative value would mean that as one value goes up, the other goes down. For both males and females in all three cities, the correlations were positive, but in only three instances were they meaningful. The correlation between tests for heroin and methadone for San

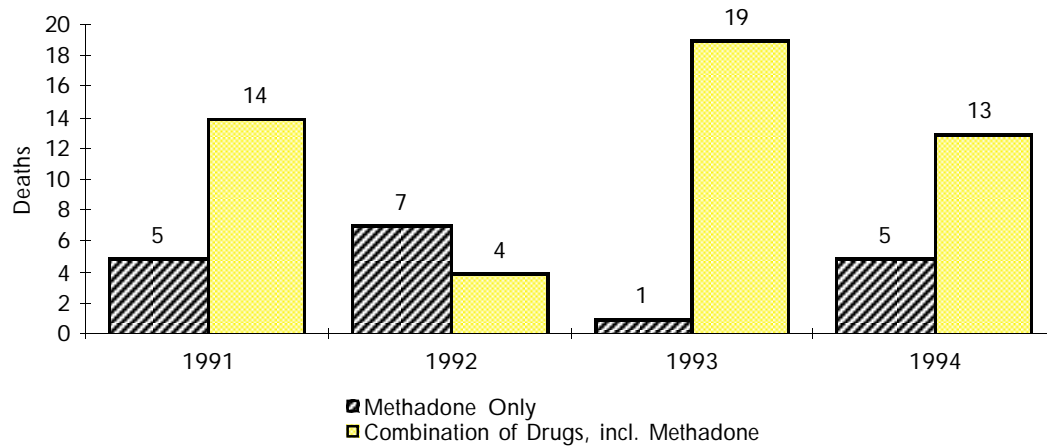
Antonio males was .457, for San Antonio females, .664, and for Houston males, .699. This positive correlation could mean that the same arrestees are taking both drugs and testing positive for opiates and methadone, or they could be different individuals; DUF does not provide information on individual arrestees. The other groups had very low correlations because there were no methadone positives reported most quarters, so meaningful statistics could not be generated.

## V. Overdose Deaths

Every year TCADA obtains copies of all death certificates where one of the causes of death involves a mention of any drug. Copies of all certificates where the term “methadone” was listed were analyzed for this paper.

Analysis of overdose deaths is a very complex and contradictory topic. Forensic pathologists try to determine if the presence of methadone in decedents is causal, contributory, or independent.<sup>8</sup>

**Exhibit 11 — Overdose Deaths with Mentions of Methadone, 1991-1994**



“It is very rare for a methadone patient on an adequate dose to overdose on methadone alone . . . (but) the opioid-naïve person is very subject to overdose . . . (and) patients admitted to MTP who exaggerate their (heroin) dose are also at risk.”<sup>9</sup>

The problem is shown in a study by the Centers for Disease Control, *Medical Examiner Cases in Which Methadone Was Detected, Harris County, Texas, 1987-1992*. This study “highlighted the difficulty in determining methadone toxicity as a cause of death. The presence of multiple drugs, uncertainty regarding level of opiate tolerance, and possible metabolism of the drug before death made it difficult to determine if death was due primarily to methadone toxicity or whether methadone played a contributory role. We found that most of the methadone-detected deaths were not attributed to methadone toxicity alone, but rather to polydrug toxicity.”<sup>10</sup>

Comparison of the actual copies of the death cer-

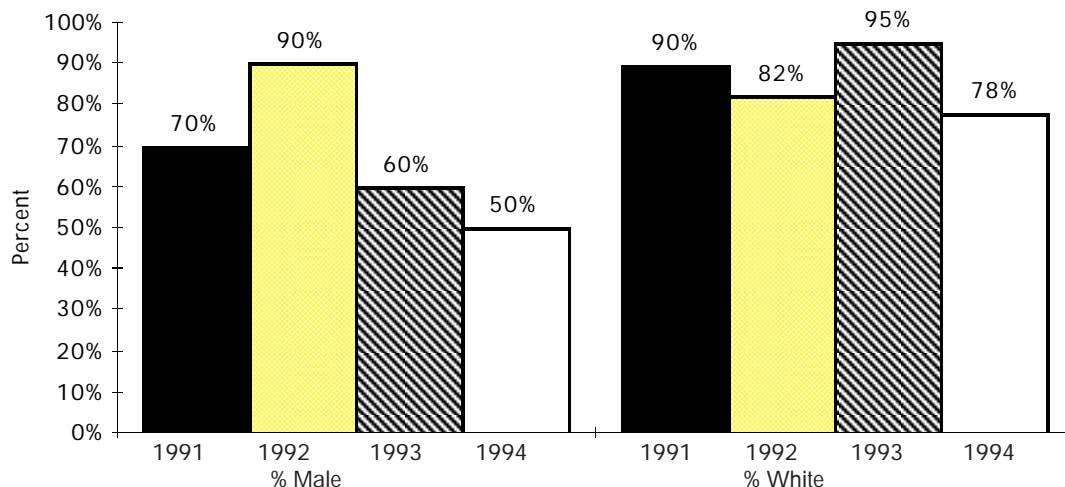
tificates with this CDC report revealed that in 1991, there were 13 actual death certificates from Harris County where the term “methadone” was used; the CDC report looked at a total of 27 autopsies in Harris County where methadone was detected in the decedent’s body. For this paper, only copies of the death certificates were analyzed.

Exhibit 11 shows the number of deaths which were due solely to methadone and the number which involved combinations of drugs, for 1991 through 1994. Anywhere from 61 to 79 percent of the deaths involved combinations of drugs which included methadone.

In 1991, there were 19 deaths where methadone was mentioned, and of these, only five said methadone was the only substance found. In 1992, there were 11 methadone overdose deaths, and seven mentioned only methadone. In 1993, there were 20 methadone overdose deaths, and none were solely from methadone; there was one suicide. In addi-



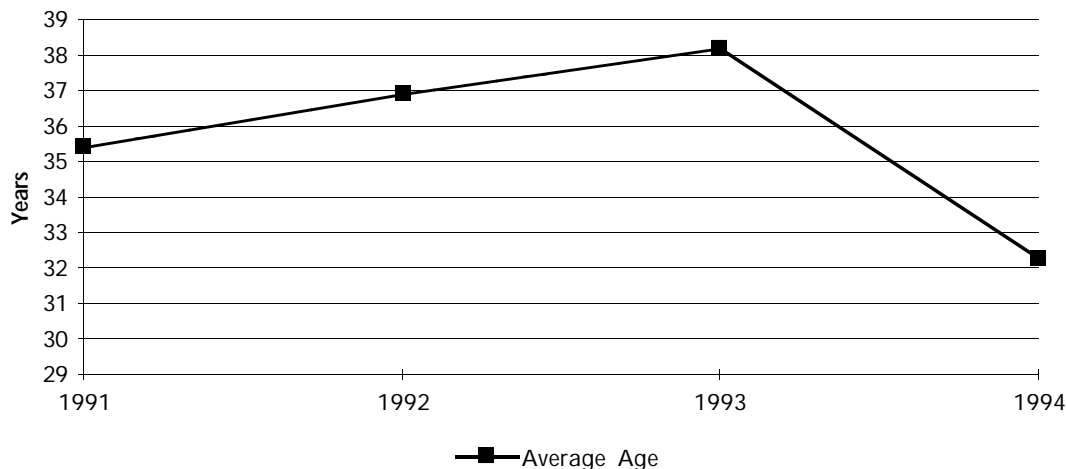
**Exhibit 12 — Characteristics of Decedents in Deaths with Methadone Mention, 1991-1994**



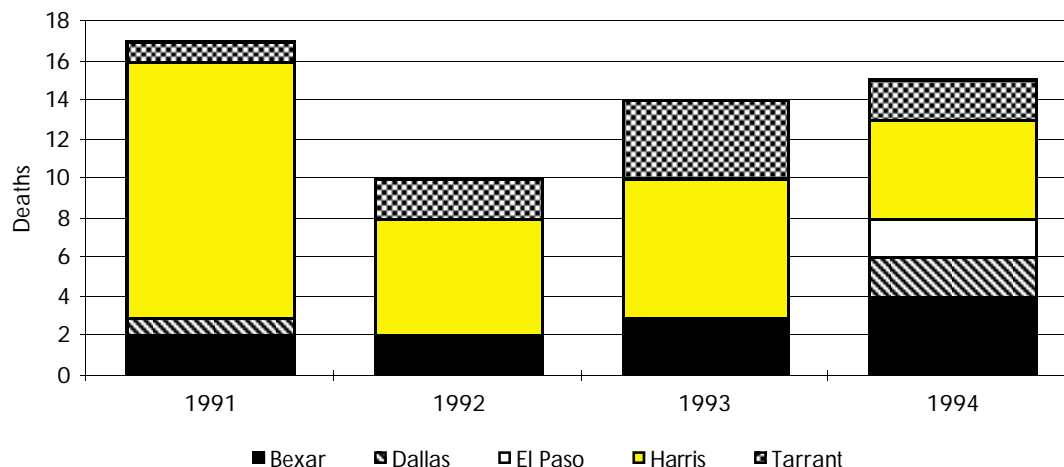
tion, available data shows that 13 of the decedents, or 65 percent, were clients in methadone treatment programs at the time of their death. In 1994, there were 18 methadone overdose deaths,<sup>11</sup> of which four were suicides; 10, or 56 percent, of the deaths mentioning methadone were patients in methadone treatment programs.

In addition to reporting information on clients who died of drug overdoses, methadone treatment programs also report cause of death for patients who have died while enrolled in the program.<sup>12</sup> In 1993, 18 clients died of other physical problems, including AIDS, cardiovascular diseases, and liver disease, as compared to 11 clients who died of drug

**Exhibit 13 — Age of Decedents in Deaths with Methadone Mention, 1991-1994**



**Exhibit 14 — Methadone Mentions by County of Death Where There Were Two or More Cases/Year, 1991-1994**



overdoses. In 1994, 28 clients died from other cases, while only 9 died of drug overdoses.

Exhibit 12 shows that decedents with a mention of methadone were most likely male and White. When the characteristics of these persons were averaged for 1991 through 1994, 67 percent were male, 86 percent were White, 9 percent were Hispanic, and 6 percent were African American. The average age varied by year, ranging from 35.4 years in 1991 to 36.9 in 1992 to 38.2 in 1993 to 32.3 in 1994 (Exhibit 13). Over the four years, the average age was 35.8 years. The addict entering publicly funded methadone treatment in 1995 was older, at 38.9 years.

Comparison of the characteristics of clients in treatment with the characteristics of decedents show both similarities and differences. Two-thirds of the clients entering treatment in the 1992 to 1995 period and decedents in the 1991 to 1994 period were male. The age of the decedents is several years younger than that of the MTP client.<sup>13</sup> In addition,

the decedents were much more likely to be White (86 percent) as compared to 69 percent of the private treatment clients and 38 percent of the public treatment clients.

County of death was also examined and Exhibit 14 shows that after the 1991 regulatory efforts to decrease diversion in Harris County, the number of cases in that county have decreased, whereas the number of deaths in other counties has tended to increase since then.

## VI. Summary

- Heroin in Texas is still primarily Mexican heroin, and although white heroin is becoming more available, a new cohort of users of white heroin has not yet been seen in traditional indicator data.
- Heroin addicts and methadone treatment clients are aging.
- In 1995, heroin addicts entering publicly funded methadone rather than other modalities were more likely to be female, older, and employed,

and to have more family support. They were less likely to be referred from the criminal justice system.

- TCADA treatment data shows that most clients in these programs are persons of color, but private treatment program data and overdose death data show that a substantial number of addicts are White.
- There are two different types of methadone clients: the employed, educated, and more affluent who are in private treatment and the underemployed and unemployed who are in public treatment.
- Persons who die of drug overdoses where methadone is mentioned were most likely to have used multiple substances.
- Heroin and methadone use is positively correlated, as shown in the arrest and death data.
- The presence of multiple methadone treatment programs in a city does not lead to an increase in the percentage of arrestees testing positive for opiates and methadone.

### Endnotes

- <sup>1</sup> J. C. Maxwell, *Heroin Abuse Trends in Texas and Results of the 1994 Survey of Methadone Programs* (Austin, Tx.: TCADA Research Brief, 1994).
- <sup>2</sup> National Institute on Drug Abuse, *Epidemiologic Trends in Drug Abuse, Proceedings of the Community Epidemiology Work Group* (Rockville, Md.: NIDA, published biannually).
- <sup>3</sup> The stability in numbers is due to the fact that TCADA has not funded methadone programs in new cities; the growth in methadone treat-

ment programs has been through the private sector. In 1988, 11 of the 43 methadone treatment programs were funded by TCADA; in 1995, 10 of 51 were TCADA-funded.

- <sup>4</sup> Twenty-seven persons addicted to other opiates and 3 addicted to non-prescription methadone were also admitted to methadone treatment programs in 1995.
- <sup>5</sup> See pages 7-9, J. C. Maxwell, *Heroin Trends in Texas and Results of the 1994 Survey of Methadone Programs* (Austin, Tx.: Texas Commission on Alcohol and Drug Abuse, 1994).
- <sup>6</sup> “Oral” could reflect opium eating or using a nose-dropper or syringe to drip heroin down the nose.
- <sup>7</sup> National Institute on Drug Abuse, *Epidemiologic Trends in Drug Abuse, Proceedings of the Community Epidemiology Work Group* (Rockville, Md.: NIDA, published biannually).
- <sup>8</sup> V. P. Dole, “Commentary: On Federal Regulation of Methadone Treatment,” *Journal of the American Medical Association*, 274(16), October 25, 1995.
- <sup>9</sup> Letter from J. Thomas Payte, M.D. to Jane Maxwell, April 1996.
- <sup>10</sup> D. H. Barrett, A. J. Luk, G. Parrish, and T. S. Jones, *Medical Examiner Cases in Which Methadone Was Detected, Harris County, Texas, 1987-1992* (Centers for Disease Control, n.d.), 2.
- <sup>11</sup> The death of a five-year old child who drank his parent’s methadone is excluded from all analysis.
- <sup>12</sup> Because of the lifestyles of some clients, pro-

grams may not know about the deaths of some clients, nor about the cause of death in some instances.

- <sup>13</sup> Since individual client data were not collected for clients in private methadone programs, their average age could not be calculated.